

Wisconsin Land Cover Grid

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Identification_Information:

Citation:

Citation_Information:

Originator: Wisconsin Department of Natural Resources

Publication_Date: 1998

Title: Wisconsin Land Cover Grid

Geospatial_Data_Presentation_Form: raster digital data

Publication_Information:

Publication_Place: Madison, Wisconsin

Publisher: Wisconsin Department of Natural Resources (WiDNR)

Other_Citation_Details:

Upper Midwest Gap Analysis Program (UMGAP) Image Processing Protocol (1998), available at: <http://www.umesc.usgs.gov/umgap/documents.html>

Online_Linkage: <http://www.dnr.state.wi.us/maps/gis/datalandcover.html>

Online_Linkage:

ftp://gomapout.dnr.state.wi.us/geodata/landcover/wiscland_landcover.zip

Online_Linkage: <http://maps.dnr.state.wi.us/webview/>

Description:

Abstract:

This Grid-format data set, known as WISCLAND Land Cover, is a raster representation of land cover of Wisconsin derived from Landsat satellite imagery. The source data were acquired from the nationwide MRLC (Multi-Resolution Land

Characteristics Consortium) acquisition of dual-date Landsat Thematic Mapper (TM) data primarily from 1992. The image processing technique followed was published in the UMGAP Image Processing Protocol (1998).

The original pixel size of the source TM data is 30 meters, however the classified WISCLAND Land Cover data (excluding URBAN) are generalized or 'smoothed' to an area no smaller than four contiguous pixels (equivalent to approximately one acre). The result of this smoothing is that any feature five acres or larger may be resolved in the data (i.e., Minimum Mapping Unit (MMU) of five acres). The Land Cover data are usable at nominal scales of 1:40,000 to 1:500,000 for a wide variety of resource management and planning applications. The classification scheme was designed to be compatible with existing classification schemes such as UNESCO's and Anderson's.

Purpose:

These data can be used for landscape scale analysis in various disciplines such as wildlife ecology, forestry, or land use planning. The data have been developed for inclusion in the Gap Analysis Program. The data should be used at scales smaller than 1:40,000. It is also suggested that the data be used at no less than the five acre minimum mapping unit. ArcView with the Spatial Analyst Extension, ArcInfo/ ArcGIS Grid, or comparable GIS software is needed to use the Grid format data meaningfully.

Supplemental_Information:

Extensive additional information about this data set, including data lineage information, is provided in the 'Land Cover of Wisconsin, User's Guide to WISCLAND Land Cover Data', 1999, WiDNR. The WISCLAND User's Guide is accessible at: [URL:http://www.dnr.state.wi.us/maps/gis/datalandcover.html](http://www.dnr.state.wi.us/maps/gis/datalandcover.html)

"WISCLAND" is the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data. Additional information about WISCLAND is posted on the Wisconsin State Cartographer's Office website: [URL:http://www.geography.wisc.edu/sco/wiscland/wiscland.html](http://www.geography.wisc.edu/sco/wiscland/wiscland.html).

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1991

Ending_Date: 1993

Currentness_Reference:

Date of the Landsat TM satellite data acquisition for the MRLC Consortium

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None planned

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -92.964587

East_Bounding_Coordinate: -86.706218

North_Bounding_Coordinate: 47.088090

South_Bounding_Coordinate: 42.457880

Keywords:

Theme:

Theme_Keyword_Thesaurus: none

Theme_Keyword: land cover

Theme_Keyword: vegetation

Theme_Keyword: Landsat Thematic Mapper

Theme_Keyword: Gap Analysis

Theme_Keyword: environment

Theme_Keyword: imageryBaseMapsEarthCover

Place:

Place_Keyword_Thesaurus: none

Place_Keyword: Wisconsin

Access_Constraints: None

Use_Constraints: None; Recommendations/guidelines documented.

Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wisconsin DNR, Bureau of Technology Services

Contact_Position: GIS Data Specialist

Contact_Address:

Address_Type: mailing address

Address: P.O. Box 7921, 101 S. Webster St.

City: Madison

State_or_Province: WI

Postal_Code: 53707-7921

Country: USA

Contact_Electronic_Mail_Address: dnr.geodata@dnr.state.wi.us

Hours_of_Service: normal business hours or as available

Browse_Graphic:

Native_Data_Set_Environment:

Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 1; ESRI ArcCatalog
8.3.0.800

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Accuracy Assessment matrices have been completed for each classification unit of

the dataset, or 'SCCU' (Spectrally Consistent Classification Unit). These matrices should be referred to when using the WISCLAND Land Cover Data, and are included as MS Excel spreadsheets. Accuracy Assessment was calculated separately for wetlands and uplands. With uplands, errors of omission and commission (both at species level, and generalized level) have been tallied for each classification unit or 'SCCU', including an overall percentage of accuracy, and a K-hat statistic. Wetlands accuracy was also based on the classification unit, with percentage User's accuracy for each class and an overall percentage accuracy. Urban accuracy assessment was performed on its unit of classification, the full TM scene. Both User's and an overall accuracy assessment are given.

Logical_Consistency_Report:

Because of the 8-bit file structure used for the WISCLAND Land Cover data, the ERDAS software prevents the assignment of invalid pixel values outside of a 0-to-256 range. In addition, the data have undergone visual, on-screen review by members of the DNR Land Cover development team to check for classification errors or other anomalies.

Completeness_Report:

A stratified random sampling technique was used to identify 'ground truthing' points for the purpose of land cover classification and accuracy assessment, as described in the WISCLAND Land Cover Protocol. A 'Lineage' document (see Supplemental Information above) lists the final land cover classifications, and classes omitted, for each processing SCCU.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The source nationwide MRLC (Multi-Resolution Land Characteristics Consortium) data were geometrically corrected by EROS Data Center to 1:24,000 scale USGS topographic quadrangle maps. Accuracy standards were on the order of RMS error no greater than 1 pixel. The WISCLAND Land Cover data are considered to reflect the stated positional accuracy of the source MRLC data set, with positional error of no more than plus or minus 1 pixel (30 meters).

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator:

US Geological Survey, EROS (Earth Resources Observation Systems) Data Center

Publication_Date: 1993

Title:

MRLC (Multi-Resolution Land Characteristics Consortium) acquisition of dual-date Landsat Thematic Mapper (TM) data

Edition: None

Geospatial_Data_Presentation_Form: Remote-sensing image

Publication_Information:

Publication_Place: Sioux Falls, South Dakota

Publisher: EROS Data Center

Other_Citation_Details: None

Source_Scale_Denominator: 40,000 (nominal)

Type_of_Source_Media: 8mm magnetic tape

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1991

Ending_Date: 1993

Source_Currentness_Reference:

Date of the Landsat TM satellite data acquisition for the MRLC Consortium.

Source_Citation_Abbreviation: MRLC Landsat TM satellite data.

Source_Contribution:

Remote-sensing imagery used to derive land cover information. For more information refer to: Barra, T.J. and D. Shaw, 1994. Multi-Resolution Land Characteristics Consortium: Documentation Notebook. Contract 68-DO-0106.

Process_Step:

Process_Description:

The geo-rectified MRLC data were processed according to the protocol published in the UMGAP Image Processing Protocol (1998), found at: <http://www.umesc.usgs.gov/umgap/documents.html>. The classified data (except URBAN) were generalized from their original 30-meter resolution to a one acre area of any four contiguous like pixels using a clump-sieve-fill algorithm devised within Imagine and described in detail within the in-house technical procedures document. Strata were clipped at the SCCU boundary, converted from Imagine v.8.3 files into ArcInfo Grids, projected into WTM83/91, and then joined for continuous coverage.

Process_Date: 1994-1998

Spatial_Data_Organization_Information:

Indirect_Spatial_Reference: None

Direct_Spatial_Reference_Method: Raster

Raster_Object_Information:

Raster_Object_Type: Grid Cell

Row_Count: 16995

Column_Count: 15846

Vertical_Count: 1

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Planar:

Map_Projection:

Map_Projection_Name: Transverse Mercator

Transverse_Mercator:

Scale_Factor_at_Central_Meridian: 0.999600

Longitude_of_Central_Meridian: -90.000000

Latitude_of_Projection_Origin: 0.000000

False_Easting: 520000.000000

False_Northing: -4480000.000000

Planar_Coordinate_Information:

Planar_Coordinate_Encoding_Method: row and column

Coordinate_Representation:

Abscissa_Resolution: 30.000000

Ordinate_Resolution: 30.000000

Planar_Distance_Units: meters

Geodetic_Model:

Horizontal_Datum_Name: D_North_American_1983_HARN

Ellipsoid_Name: Geodetic Reference System 80

Semi-major_Axis: 6378137.000000

Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: wlcgw930

Attribute:

Attribute_Label: ObjectID

Attribute_Definition: Internal feature number.

Attribute_Definition_Source: ESRI

Attribute_Domain_Values:

Unrepresentable_Domain:

Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute_Label: Value

Attribute:

Attribute_Label: Count

Attribute:

Attribute_Label: Level

Attribute:

Attribute_Label: Class

Attribute:

Attribute_Label: Level1

Attribute:

Attribute_Label: Level2

Attribute:

Attribute_Label: Level3

Attribute:

Attribute_Label: Comment

Overview_Description:

Entity_and_Attribute_Overview:

Each pixel within the WISCLAND Land Cover raster dataset has an associated 8-bit value which corresponds to a Land Cover class. The WISCLAND Land Cover classification scheme is a hierarchical scheme which is modeled after Anderson's Classification scheme (USGS, 1976) but adaptable to other existing classification schemes, especially the UNESCO/The Nature Conservancy classification system.

Entity_and_Attribute_Detail_Citation:

WISCLAND LAND COVER CLASSIFICATION SCHEME - Numbers in parentheses are the numeric class values assigned to pixels. The 3-level hierarchy is indicated by decimal values and indentation. Gaps in the numeric and hierarchical sequence are due to entries in the 'extended' classification which were not part of the final WISCLAND classification scheme. (For a complete explanation of the WISCLAND Land Cover classification scheme, refer to the User's Guide cited in the Supplemental Information section.)

(100) 1. URBAN/DEVELOPED (101) 1.1 High Intensity (104) 1.2 Low Intensity
(105) 1.3 Golf Course

(110) 2. AGRICULTURE (111) 2.1.1 Herbaceous/Field Crops (112) 2.1.2 Row
Crops (113) 2.1.3 Corn (118) 2.1.8 Other Row Crops (124) 2.1.9 Forage Crops
(includes hay and hay/mix) (148) 2.3 Cranberry Bog

(150) 3. GRASSLAND (includes timothy, rye, pasture, idle, CRP, grass and
volunteer)

(160) 4. FOREST (161) 4.1 Coniferous (162) 4.1.1 Jack Pine (163) 4.1.2 Red Pine
(166) 4.1.5 White Spruce (173) 4.1.11 Mixed/Other Coniferous (175) 4.2 Broad-
Leaved Deciduous (176) 4.2.1 Aspen (177) 4.2.2 Oak (179) 4.2.4 Northern Pin
Oak (180) 4.2.5 Red Oak (183) 4.2.8 Maple (185) 4.2.10 Sugar Maple (187) 4.2.12

Mixed/Other Broad-Leaved Deciduous (190) 4.3 Mixed Deciduous/Coniferous

(200) 5. OPEN WATER

(210) 6. WETLAND (211) 6.1 Emergent/Wet Meadow (212) 6.1.1 Floating Aquatic Herbaceous Vegetation (217) 6.2 Lowland Shrub (218) 6.2.1 Broad-Leaved Deciduous (219) 6.2.2 Broad-Leaved Evergreen (220) 6.2.3 Needle-Leaved (222) 6.3 Forested (223) 6.3.1 Broad-Leaved Deciduous (229) 6.3.6 Coniferous (234) 6.3.10 Mixed Deciduous/Coniferous

(240) 7. BARREN (250) 8. SHRUBLAND (255) 9. CLOUD COVER

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wisconsin DNR, Bureau of Technology Services

Contact_Position: GIS Data Specialist

Contact_Address:

Address_Type: mailing address

Address: P.O. Box 7921, 101 S. Webster St.

City: Madison

State_or_Province: WI

Postal_Code: 53707-7921

Country: USA

Contact_Electronic_Mail_Address: dnr.geodata@dnr.state.wi.us

Resource_Description: Downloadable Data

Distribution_Liability:

Refer to <<http://www.dnr.state.wi.us/org/legal/WebSiteLegalInformation.html>>

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: ARC/INFO Grid format

Format_Version_Number: ARC7.1.1

File-Decompression_Technique: WINZIP

Transfer_Size: 75.693

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name:

ftp://gomapout.dnr.state.wi.us/geodata/landcover/wiscland_landcover.zip

Access_Instructions: Download from DNR ftp site.

Offline_Option:

Offline_Media: CD-ROM

Recording_Capacity:

Recording_Density: 650

Recording_Density_Units: megabytes

Recording_Format: ISO 9660

Metadata_Reference_Information:

Metadata_Date: 20050214; 20051122

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wisconsin DNR, Bureau of Technology Services

Contact_Position: GIS Data Specialist

Contact_Address:

Address_Type: mailing address

Address: P.O. Box 7921, 101 S. Webster St.

City: Madison

State_or_Province: WI

Postal_Code: 53707-7921

Country: USA

Contact_Electronic_Mail_Address: dnr.geodata@dnr.state.wi.us

Hours_of_Service: normal business hours or as available

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>

Profile_Name: ESRI Metadata Profile

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